

Serial No.: 09/079,471  
Group Art Unit: 3761

IN THE CLAIMS

Please amend the Claims as follows.

Please cancel Claims 7, 8, 10, 12-14, 21, 22, 23, and 24 without prejudice.

Please add new Claims 25 and 26 and then cancel Claims 9 and 11 without prejudice.

1. (Previously Amended) An apparatus for providing a primary roof control support in an underground mine, comprising:

(a) a round or oval dome-shaped bearing plate for contacting, supporting, and compressing a mine roof in an underground mine;

(b) a center aperture in said bearing plate for receiving a roof bolt when installed in said mine roof;

(c) apertures on said bearing plate for hanging cables and wires and "J" hooks;

(d) a recessed center on said bearing plate for concealing a head on said roof bolt when installed in said mine roof and for providing a lock washer effect on said roof bolt; and

(e) a center recessed area on said bearing plate adapted to cause an outside rim to contact said mine roof first and then to compress said mine roof at a 30 to 45 degree angle.

Serial No.: 09/079,471  
Group Art Unit: 3761

2. (Previously Amended) The apparatus as set forth in Claim 1, wherein said bearing plate is adapted to replace a base plate operating in conjunction with said bearing plate.

3. (Previously Amended) The apparatus as set forth in Claim 1, wherein said round or oval shaped dome is adapted to cause outer rim contact first.

4. (Previously Amended) The apparatus as set forth in Claim 3, wherein said bearing plate features a center deflection with respect to the radial edge of said bearing plate such that said bearing plate is convex with respect to the mine roof surface.

5. (Previously Amended) The apparatus as set forth in Claim 2, wherein said bearing plate is elliptical with a circular configuration in the form of a plate.

6. (Previously Amended) The apparatus as set forth in Claim 5, wherein said bearing plate features a center deflection with respect to a radial edge of said bearing plate such that said bearing plate is convex with respect to the mine roof surface.

7. (Cancelled)

Serial No.: 09/079,471  
Group Art Unit: 3761

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Original) A method of supporting a roof in an underground mine, comprising:

(a) providing a plate acting as a lock washer to the roof bolt;

(b) providing a round or elliptical dome-shaped plate having apertures for hanging cables;

(c) providing a plate having a recessed center lower than the outer rim and having a recessed center such that the head of the bolt will be partially protected, when installed in the roof;

Serial No.: 09/079,471  
Group Art Unit: 3761

(d) providing a plate outer rim conforming to regular or irregular roof surfaces; and

(e) providing a plate adjustable in strength by adding a plurality of ribs to the domed area of the plate.

16. (Original) A method of supporting a roof in an underground mine as set forth in Claim 15, further comprising installing and monitoring plate effectiveness by the lock washer effect in the mine.

17. (Original) A method as set forth in Claim 15, wherein said safety plate recessed center reduces injuries to personnel and damage to the roof control system by passing equipment.

18. (Original) A method as set forth in Claim 15, further comprising providing a system for hanging cables and wires and maintaining dangerous electrical cables and wires close to the roof, and out of harms way.

19. (Original) A method as set forth in Claim 16, wherein said safety bearing plate recessed center reduces injuries to personnel and damage to the roof control system by passing equipment.

Serial No.: 09/079,471  
Group Art Unit: 3761

20. (Original) A method as set forth in Claim 17, further comprising providing a system for hanging cables and wires and maintaining dangerous electrical cables and wires close to the roof, and out of harms way.

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (New) In combination with a roof bolt used for primary roof support in an underground mine, the improvement comprising a round dome-shaped bearing plate, having an extended lateral surface for contacting an inside roof surface of an underground mine, and further defining an aperture therethrough such that said roof bolt can be passed through said bearing plate and said aperture of said bearing plate to secure said bearing plate to said inside roof surface of said underground mine, with said bearing plate interposed between said roof bolt and said inside roof surface of said underground mine, wherein said bearing plate has a substantially circular or elliptical configuration and a

Serial No.: 09/079,471  
Group Art Unit: 3761

center deflection with respect to a radial edge of said bearing plate such that said bearing plate is convex with respect to said inside roof surface.

26. (New) A method for providing a primary roof support in an underground mine, comprising the steps of:

(a) positioning a roof bolting machine in an area to be secured or bolted in an underground mine;

(b) drilling a hole into a mine roof through an immediate roof into an upper strata to a specified depth deeper than the length of a roof bolt being used;

(c) inserting a plastic tube of epoxy resin and hardener into the drilled hole;

(d) inserting said roof bolt through an aperture of a roof bolt plate;

(e) centering a bolt head on said roof bolt in a drill machine rotation head;

(f) applying upward pressure and rotation as said roof bolt is pushed into said drilled hole in said roof, breaking the tube of epoxy resin and mixing the resin and hardener together and forcing the mixture into any cracks or separations in the strata;

(g) subsequently after the plate and bolt head reach within about an inch of the roof, stopping the upward pressure and remaining spinning, stopping the spinning motion and applying the

Serial No.: 09/079,471

Group Art Unit: 3761

full upward pressure of the bolting machine to push the roof bolt and center of the plate to compress the immediate roof, subsequently lowering the bolter head and observing the quality of installation by noticing the lock washer effect on the head of the bolt, and observing whether the bolt head lowers with the bolting machine, such that the installed bolt has lost its anchorage to form a failed bolt, then installing another bolt to replace the failed bolt, and moving to the next area in the underground mine to be secured; and

(h) wherein said roof bolt plate features a round or oval dome-shaped plate and said specified depth is in a range of approximately three to four inches.